

Claims

1. A device for identification of a detector unit in an X-ray imaging apparatus
5 provided with:
- a detector unit (1a or 1b or 1c ...), selected from a group (10) of different detector units (1a, 1b, 1c...), and adapted for positioning to receive an image-forming X-ray radiation after passing a human or animalian object, said detector unit being a detector array with a plurality of detector pixels (4);
 - 10 – a reading unit (5) connected to the detector unit and provided with means for processing the signals (S) from said pixels of the detector unit and means for determining the position data of the pixels in said array while reading said signals,
characterized in that said device comprises:
 - a rack (9) for storing those detector units belonging to said group (10);
 - 15 – a predetermined slot (7a, 7b, 7c...) in the rack for each individual detector unit (1a, 1b, 1c...);
 - a sensor unit (6a, 6b, 6c...) in each of said slots capable of detecting presence (P1) and absence (A1) of the detector units in their predetermined slots; and
 - a communication line (2) between said sensor unit and said reading unit (5) providing identification data concerning at least the absence (A1) of a single detector
20 unit from its slot (7a or 7b or 7c ...) in the rack into said reading unit.
2. A device according to claim 1, **characterized** in that said sensor unit is:
- a mechanical contact switch (12) with ON-OFF characteristics; or
 - 25 – an optical fork switch (13) with ON-OFF characteristics; or
 - a magnetic field switch (14) with ON-OFF characteristics; or
 - a capacitive switch (15) with ON-OFF characteristics; or
 - an ultrasound switch (16) with ON-OFF characteristics.
3. A device according to claim 1, **characterized** in that said reading unit (5) comprises memory means (22) for storing at least individual clock-gain data files (DF1, DF2, DF3...), each of which being specific to a detector unit in said group; and that said reading unit (5) further comprises calculation means (23), which employs that one of the specific data files corresponding to the detector unit, from
35 which said identification data in the absence (A1) thereof from the slot is received, for said pixel signal processing and said pixel position data determining.

4. A device for identification of a detector unit in an X-ray imaging apparatus provided with:
- a detector unit (1a or 1b or 1c ...), selected from a group (10) of different detector units (1a, 1b, 1c...), and adapted for positioning to receive an image-forming X-ray radiation after passing a human or animalian object, said detector unit being a detector array with a plurality of detector pixels (4);
 - a reading unit (5) connected to the detector unit and provided with means for processing the signals (S) from said pixels of the detector unit and means for determining the position data of the pixels in said array while reading said signals,
- 10 **characterized** in that said device comprises:
- a transmitter-receiver (8) at side(s) of a space (V) for said object;
 - recognition means (11) in said transmitter-receiver unit capable of detecting presence (P2) and absence (A2) of the detector units in said space (V);
 - a response unit (3a, 3b, 3c...) with identity carrying means at each of said detector
- 15 units (1a, 1b, 1c...); and
- a communication line (2) between said transmitter-receiver unit and said reading unit providing identification data concerning the presence (P2) of a single detector unit in said space (V) into said reading unit.
- 20 5. A device according to claim 4, **characterized** in that said transmitter-receiver unit (8) and said response unit (3a, 3b, 3c...) as a combination is:
- an optical digital camera (17a) with shape or color analyzing means (17b), and specific configuration or color (17c) as said identity carrying means, with ON-OFF characteristics; or
 - 25 – an ultrasound sender-receiver (18a), and specifically tuned resonators (18b) as identity carrying means, with ON-OFF characteristics; or
 - an electromagnetic field transmitter-receiver (19a), and a transponder (19b) as said identity-carrying means, with ON-OFF characteristics.
- 30 6. A device according to claim 4, **characterized** in that said reading unit (5) comprises memory means (22) for storing at least individual clock-gain data files (DF1, DF2, DF3...), each of which being specific to a detector unit in said group; and that said reading unit (5) further comprises calculation means (23), which employs that one of the specific data files corresponding to the detector unit, from
- 35 which said identification data in the presence (P2) thereof within the space is received, for said pixel signal processing and said pixel position data determining.

7. A device according to claim 5, **characterized** in that electromagnetic field transmitter-receiver (19a) is a short distance radio wave link.

5 8. A method for identification of a detector unit in an X-ray imaging apparatus adapted to utilize one detector unit of several detector units selectively for providing image data from an object (21) through X-ray radiation (R), **characterized** in that said method comprises the steps of:

- providing at least two detector units (1a, 1b, 1c...) available in a rack (9);
- selecting one (1a or 1b or 1c ...) of said at least two detector units and inserting it
10 into an imaging X-ray radiation receiving position;
- reading an identification data from said rack respective to an absence (A1) of said one detector unit from said rack (9); and
- feeding data files (DF1, DF2, DF3...) corresponding to said absent (A1) detector unit and forwarded on the basis of said identification data to a reading unit (5),
15 which operates at least for reading image data from the detector unit.

20 9. A method for identification of a detector unit in an X-ray imaging apparatus adapted to utilize one detector unit of several detector units selectively for providing image data from an object (21) through X-ray radiation (R), **characterized** in that said method comprises the steps of:

- providing at least two detector units (1a, 1b, 1c...) available;
- selecting one (1a or 1b or 1c ...) of said at least two detector units and moving it into an imaging X-ray radiation receiving position within a space (V) for operation;
- reading remotely an identification data from said one detector unit present (P1) in
25 said space (V) for operation; and
- feeding data files (DF1, DF2, DF3...) corresponding to said present (P2) detector unit and forwarded on the basis of said identification data to a reading unit (5), which operates at least for reading image data from the detector unit.